

12.—MARINE COPEPODA FROM WESTERN AUSTRALIA.

I. LITTORAL HARPACTICIDS FROM ROTTNEST ISLAND.

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The species dealt with in the following pages were collected from weed, attached to rocks on the shore at Bathurst Point, Rottnest Island. This island is a coastal limestone formation (actually a calcareous sandstone) lying some 12 miles west of Fremantle, with its long axis running approximately east and west. A description of the island is given by Clauert (1929). Bathurst Point lies at the north-east point of the island (Lighthouse Point in Clauert's map). The material was collected during April, 1939.

Fam. PELTIDIIDAE.

Parapeltidium cristatum.

P. cristatum Nicholls, 1941, p. 399, fig. 9.

One specimen, an adult male, was taken and has been described in a recent paper dealing with copepods from South Australia.

Fam. THALESTRIDAE.

Eudaetylopus australis.

E. australis Nicholls, 1941, p. 410, fig. 15.

This species, of which the female has already been described, is amongst those which are common to the coasts of South and Western Australia. Two specimens were taken here, one of each sex. The female (length, 1.68 mm.) shows a few minor points of difference in the second antenna, first and fifth legs. The basal segment of the exopod of the second antenna bears only one seta whereas there were two in the specimens from South Australia. In the first leg the endopod is somewhat more robust and relatively shorter, when compared with the exopod, than in the original material. The fifth leg bears an extra seta on the distal segment (fig. 1).

Male: Length, 1.35 mm. Differs from the female in the usual features and in the first leg which is rather more slender than in the female, resembling that of the female described from South Australia. The first antenna is 9-segmented, with a long sensory filament attached to the 4th segment; there is the usual hinge between the 5th and 6th segments. The other head appendages resemble those of the female. The seta formula for legs 2-4 agrees with that of the female, except for the modified endopod of the second leg (fig. 1). The segments of the fifth leg are partially fused, the basal segment bearing three unequal spines and the distal segment one large spine, four small spines, and two setae (fig. 1).

Phyllothalestris lata sp. nov.

This species, of which only one female has been found, was at first (Nicholls, 1941, p. 411) identified as *P. mysis* (Claus). There can, however, be little doubt that it is distinct owing to the greatly enlarged genital segment, described for no other species of this genus.

Female: Length, 1.71 mm. Body less slender than is usual in the genus and with a wide genital segment, the remaining segments of the urosome being much narrower (fig. 2). Rostrum small, downwardly projecting, not visible from above. First antenna 9-segmented, with sensory filament on the fourth; second antenna with 2-segmented exopod; mandible palp biramous; maxillule, maxilla, and maxilliped well developed (fig. 2), similar to those of the type species. First legs slender, rami subequal, exopod with very long middle segment. Seta formula for legs 2-4:

				endopod			exopod		
p. 2	....	....	....	1	2	221	1	1	223
p. 3	....	....	....	1	1	321	1	1	323
p. 4	....	....	....	1	1	221	1	1	323

Fifth legs of the usual type for the genus but with small differences in armature. The basal segment lacks the inner seta found in *mysis*, *paramysis* Monard (1928, p. 345) and *royi* (Monard, 1928, p. 354), and the distal segment shows two of the terminal setae transformed into spines, instead of the usual one. Caudal rami about three times as wide as long.

Male: Unknown.

This species is distinguished from all other known species in the great width of the genital segment. In other respects it is not unlike *mysis*, but differs in the exopod of the second antenna and in the fifth legs. It resembles Willey's variety *mysis harringtoni* (1935, p. 93) in the seta formula, the end segment of the second endopod having only two inner setae, whereas in *mysis* and *paramysis* there are three. In the shape and proportions of the segments of the fifth legs it resembles *paramysis* but differs in the armature.

Fam. DIOSACCIDAE.

Amphiascopsis hirsutus.

Dactylop(h)usia hirsuta Thompson and Scott, 1903, p. 269, Pl. IX., figs. 19-24.

This species has been recorded from Ceylon (Thompson and Scott); "Si-boga" Station 273 (A. Scott, 1909, p. 221); Banyuls (Monard, 1928, p. 373); Bermuda (Willey, 1931, p. 611; 1935, p. 57); and Algeria (Monard, 1937, p. 32).

The occurrence of this species on the coast of Western Australia forms yet another link between the fauna of Bermuda, the Mediterranean, Ceylon and Australia. The specimens taken here (27 females, 1 male) were all somewhat larger than those previously recorded: females 1.25-1.40 mm., male 1.17 mm.

There can be no doubt of its identity, the peculiar structure of the basipod of the male first leg and second endopod, described by Willey (1931) are characteristic, and were well shown in the specimen found here. As with the Mediterranean and Bermudan specimens the first leg shows the endopod considerably longer than was described by Thompson and Scott.

Fam. CANTHOCAMPTIDAE.

Orthopsyllus littoralis sp. nov.

Female: Length 0.9 mm. Body of usual shape, each segment except the first and last having the hinder margin fringed with denticles as shown in the figure of the urosome (fig. 3); this fringe completely encircles the body in the urosome. Rostrum well defined and articulated with the head. First antenna

4-segmented, with a large spur on the second segment and with a sensory filament on the third segment; second antenna with 1-segmented exopod, bearing 2 terminal and 1 lateral setae; mouth parts of usual structure (fig. 3). First legs with basal segment of endopod longer than distal and without inner seta, end segment with 2 long terminal setae, plumose terminally; seta formula for legs 2-4:

				endopod	exopod
p. 2	....	....	....	0 120	0 1 022
p. 3	....	....	....	0 020	1 1 022
p. 4	....	....	....	0 010	1 1 022

Fifth legs like those of *linearis* but distal segment somewhat wider. Caudal rami half as long again as wide, with large terminal seta, nearly as long as urosome, and a few inner spines. Anal operculum with a few coarse spines.

Male: Length 0.78 mm. Differs from the female in the first antenna, endopod of 3rd leg, 5th and 6th legs. First antenna 6-segmented, *subchirocerate*, (fig. 3). Endopod of third leg 3-segmented, bearing a long barbed spine on the second segment, similar to that found in *wallini* Lang (1934), and a single terminal seta on the end segment; fifth and sixth legs reduced (fig. 3). The seta formula of legs 2-4 is like that of the female.

This species, of which 2 females and 1 male were found, resembles *wallini* in having only two outer spines on the end segments of the exopods of the swimming legs, but differs from that species in lacking an inner seta on the basal segment of the first endopod, in the seta formula, and in the shape of the fifth legs in the female. The male, which resembles *wallini* in the third endopod, differs from it in the fourth endopod.

Orthopsyllus similis sp. nov.

Female: Length 0.96 mm. Body similar to that of the preceding species but the fringe of denticles on the hinder margins of the segments is confined to the dorsal surface; rostrum well defined and articulated with the head; first antenna 4-segmented, with a small spur on the second segment; exopod of the second antenna with two terminal and two lateral setae; mouth parts as in *O. littoralis*. First leg similar to that of the preceding species but having the distal segment of the endopod longer and more slender; distal segments of endopods 2-4 also longer than in *littoralis* (cf. figs. 3 and 4), and seta formula for these legs as follows:

				endopod	exopod
p. 2	....	....	....	0 110	0 0 013
p. 3	....	....	....	0 110	0 0 013
p. 4	....	....	....	0 121	0 0 013

Fifth legs very like those of *littoralis*; caudal rami nearly twice as long as wide, with a well developed inner denticulate ridge; anal operculum unarmed.

Male: Length 0.96 mm. Differs from the female in the usual sexual characters and a few minor points. First antenna 6-segmented, *subchirocerate*; coxa of first legs with outer projection; endopod of second leg having the distal segment considerably longer than in the female; third endopod 3-segmented, the modified spine on the middle segment considerably larger and more strongly modified than in other species, distal segment with an inner

seta in addition to the terminal seta ; distal segment of fifth legs comparatively short. The seta formula for legs 2-4 differs somewhat from that of the female :

				endopod	exopod
p. 2	....	....	....	0 120	0 0 023
p. 3	....	....	....	....	0 0 023
p. 4	....	....	....	0 110	0 0 023

This species resembles *linearis* ((Claus) Sars 1911) and *rugosus* Nicholls (1941) in having three outer spines on the end segment of the exopods of legs 2-4, and *wallini*, *propinquus* Monard (1926) and *rugosus* in the armature of the caudal rami. It differs from *linearis*, *wallini* and *rugosus* in the seta formula and from *propinquus* in the first and fifth legs. The male third leg is characteristic of the species.

Fam. METIDAE.

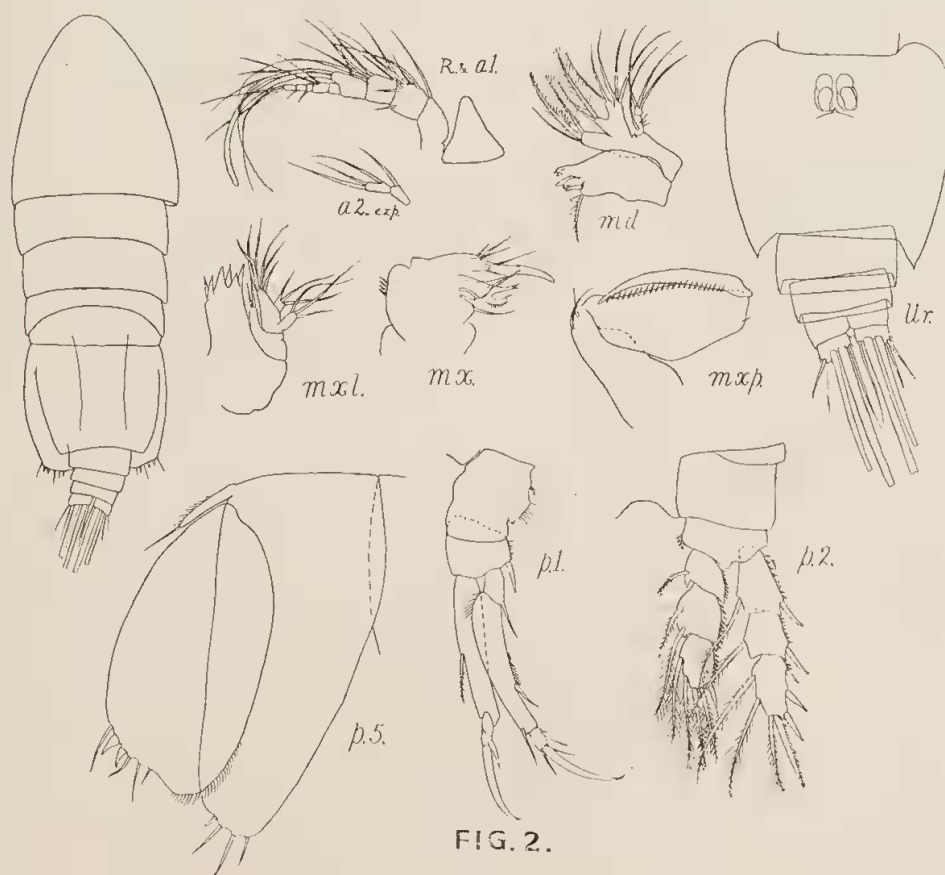
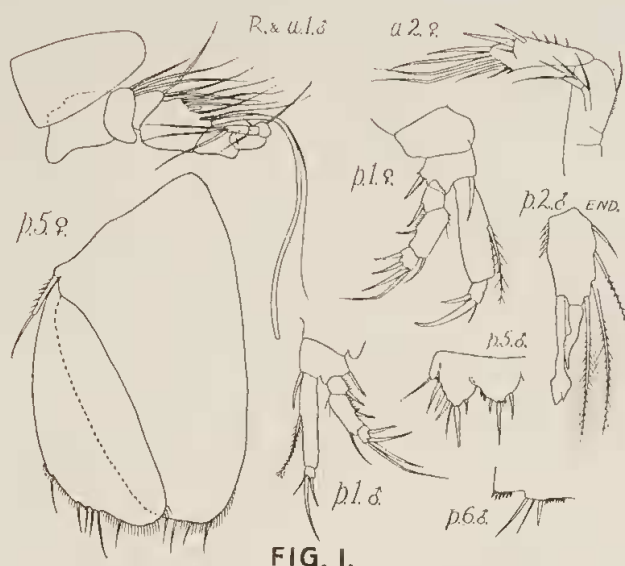
Metis jousseaumei.

Ilyopsyllus jousseaumei Richard, 1892.

Reference has already been made (1941, p. 425) to the presence in Western Australia of this widely distributed species.

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Legends for Text Figures.

Fig. 1. *Eudactylopus australis*, male and female.

Fig. 2. *Phyllothalestris lata* sp. nov., female. The first antenna, legs 1, 2 and 5 are drawn to a magnification approximately one half that used in drawing the mouth parts.

Fig. 3. **Orthopsyllus littoralis** sp. nov., male and female. All the appendages are drawn to the same scale.

Fig. 4. **Orthopsyllus similis** sp. nov., male and female. All the appendages are drawn to the same scale.

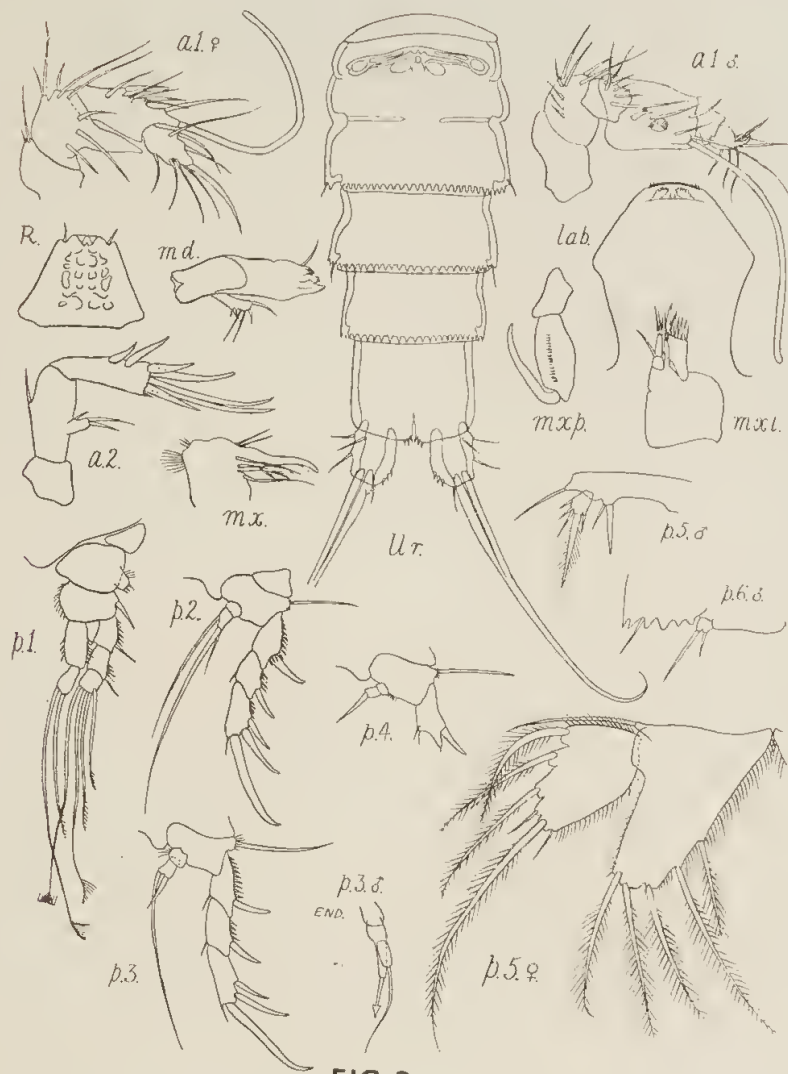


FIG. 3.

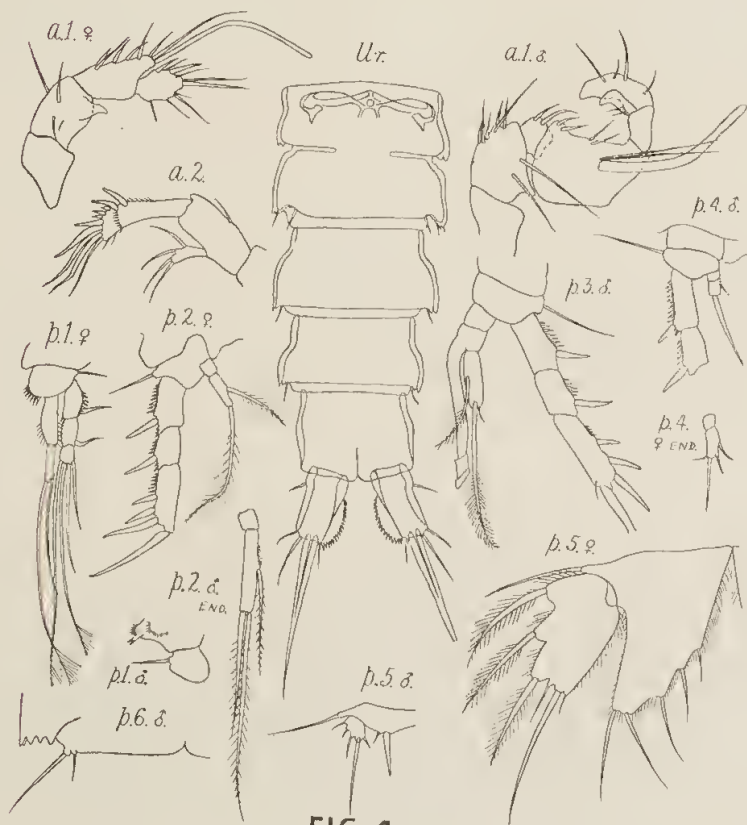


FIG. 4